REMARKS

Claims 1-2 and 46-88 are pending in the case. Claims 1-45 were originally filed in the case. Claims 3-45 were canceled by preliminary amendment. Claims 46-88 are added by amendment in a response to the previous Office Action dated October 7, 2002 ("the previous Office Action"). The rejections in that Office Action have been withdrawn, and the present Office Action:

- objected to claims 2, 46-47, 50, 53-59, 63, 65-67, 69, 70, 72-79 as allowable but for their dependence from rejected base claims;
- objected to the Abstract for a grammatical error;
- rejected claims 1, 48-49, 51, 64, 68, and 71 as anticipated under 35 U.S.C. § 102 (b) by U.S. Letters Patent 4,409,899 ("Owen, *et al.*");
- rejected claims 60-62, and 80-82 as anticipated under 35 U.S.C. § 102 (b) by U.S. Letters Patent 4,811,308 ("Michel"); and
- rejected claims 52 and 72 as anticipated under 35 U.S.C. § 102 (b) by U.S. Letters Patent 3,547,218 ("Hamilton").

Applicants meet each of the objections and respectfully traverse each of the rejections.

I. RESPONSE TO INFORMALITIES

Applicants respectfully submit that all claims pending in the application are allowable, as set forth below. Accordingly, Applicants believe the objections to claims 2, 46-47, 50, 53-59, 63, 65-67, 69, 70, 72-79 to be improvident, and ask that they be withdrawn.

The objection to the Abstract has been cured herein by amendment.

II. RESPONSE TO SUBSTANTIVE REJECTIONS

The present Office Action rejected a number of the claims as anticipated. More particularly, the present Office Action:

- rejected claims 1, 48-49, 51, 64, 68, and 71 as anticipated under 35 U.S.C. § 102 (b) by U.S. Letters Patent 4,409,899 ("Owen, *et al.*");
- rejected claims 60-62, and 80-82 as anticipated under 35 U.S.C. § 102 (b) by U.S. Letters Patent 4,811,308 ("Michel"); and

rejected claims 52 and 72 as anticipated under 35 U.S.C. § 102 (b) by U.S. Letters Patent 3,547,218 ("Hamilton").

An anticipating reference, by definition, must disclose every limitation of the rejected claim in the same relationship to one another as set forth in the claim. *In re Bond*, 15 U.S.P.Q.2d (BNA) 1566, 1567 (Fed. Cir. 1990). Office policy echoes this formulation in M.P.E.P. § 2131. Applicants respectfully submit that the references fail to meet this stringent standard.

A. Owen *et al.* Fails to Anticipate Any Claim

The Office Action alleges that Owen *et al.* anticipates claims 1, 48-49, 51, 64, 68, and 71. Claims 1 and 64 are independent. Claims 48-49 and 51 depend from claim 1, and claims 68 and 71 depend from claim 64. Applicants respectfully submit that claims 1 and 64 are not anticipated, such that claims 48-49, 51, 68, and 71 are also not anticipated. However, Applicants note that additional limitations in the dependent claims are also not disclosed, and so the dependent claims are not anticipated even if the independent claims are.

Applicants initially note that the preambles for both claim 1 and claim 64 state that the apparatus and method are for use in "seismic data acquisition in a land or transition zone environment." This recitation is not just a statement of intended use in the current context because it implies a whole host of assumptions that implicitly refute the anticipation allegation. Primary among these assumptions is the well known desire for the elements of a seismic survey—such as the positioning devices and seismic sensors—to remain as motionless as possible once emplaced. Owen *et al.*, to the contrary, assumes not only that the airplane (alleged to be a "positioning device") moves at all relevant times, but that it moves relatively extraordinarily. *See* col. 3, lines 24 – 28.

In the law of anticipation, this distinction has several important consequences. Chiefly, if the technique of Owen *et al.* were employed in Applicants' invention, the technique would ruined for its intended purpose, *i.e.*, to determine the point of closest approach for a moving target. Thus, Owen *et al.* fails to anticipate any techniques for use in "seismic data acquisition in a land or transition zone environment." *Cf. In re Gordon*, 221 U.S.P.Q. (BNA) 1125, 1127 (Fed. Cir. 1984) (where a modification or combination renders a prior art reference inoperable for its intended purpose, the reference teaches away from the modification or combination).

Even if the recitation is considered a mere statement of use, however, it provides a context that establishes that Owen *et al.* fails to disclose a "positioning device." The present Office Action alleges that the airplane 10 in Owen *et al.* is a "positioning device" because "the target range R_t is determined based on the position of the airplane." However, claims are to be construed as by those in the art, even when given their broadest reasonable construction. In the art, a "positioning device" is a device intended for use in determining a position. The airplane is not a "positioning device" as that term is used in the art because it is not intended for use in determining a position. Indeed, the airplane would prefer that its position not ever be determined in Owen *et al.* since Owen *et al.*'s ultimate goal is to destroy the airplane. *See* col. 1, lines 11-16. Nobody in the pertinent art would refer to the airplane of Owen *et al.* as a positioning device as that term in used in the art.

With respect to claims 48-49 and 68, the present Office Action also mischaracterized the nature of the acoustic signals employed. Claims 48 and 68 specify that the acoustic signals are "spread spectrum" and claim 68 specifies that the acoustic signal is "a pulse, frequency sweep, or digitally encoded sweep acoustic signal." (Applicants note that this limitation is found in claim 69, as well, although it was not rejected on Owen *et al.*) The present Office Action cites col. 3, lines 29-32, which read:

> Sounds emanating from either taxiing or take-off targets are broadband in nature, having one or more strong spectral lines in the frequency range of 1,000-3,000 Hz.

The present Office Action presumably equates "broadband" with "spread spectrum", and "pulse, frequency sweep or digitally encoded sweep". Not only would such an equation be wrong, but it is unsupported by evidence of record. Nevertheless, the terms "spread spectrum", "pulse," "frequency sweep" and "digitally encoded sweep" imply some degree of electronic conditioning. Owen *et al.* clearly utilizes the unconditioned racket made by the airplane's engines, which may be "broadband", but is not "spread spectrum", "pulse," "frequency sweep" or "digitally encoded sweep." Thus, Owen *et al.* fails to anticipate any of claims 48-49 and 68.

With respect to claims 51 and 71, the present Office Action alleges that Owen *et al.* teaches "a temperature sensor for measuring the temperature of the air," and cites col. 1, lines 40-44. Applicants respectfully submit that the present Office Action misconstrues Owen *et al.* Col. 1, lines 40-44 of Owen *et al.* teach that *other* techniques that it seeks to supplant may employ a temperature sensor. A careful reading of Owen *et al.* shows that it contains no

temperature sensor. For instance, in col. 3, at lines 19-38, Owen *et al.* sets forth the assumption underpinning the claimed technique. Among other things, Owen *et al.* assumes, at lines 35-36, that "[t]opographic relief, surface vegetation, *and meteorological effects* on sound propagation are negligible." Accordingly, Owen *et al.* fails teach the use of a temperature sensor in connection with the claimed technique.

Thus, Owen *et al.* fails to anticipate claims 1 and 64 because it fails to disclose an apparatus or method for use in "seismic data acquisition in a land or transition zone environment" or a "positioning device." Claims 48-49, 51, 68, and 71 depend from claim 1 or claim 64 and therefore are not anticipated for the same reasons. However, in addition to those deficiencies in the *prima facie* case, each dependent claim recites an additional limitation not disclosed by Owen *et al.* Thus, Owen *et al.* fails to anticipate any of claims 1, 48-49, 51, 64, 68, and 71.

B. Michel Fails to Anticipate Any Claim

The present Office Action rejected claims 60-62, and 80-82 as anticipated under 35 U.S.C. § 102 (b) by U.S. Letters Patent 4,811,308 ("Michel"). Applicants note that Michel, like Owen, *et al.*, is directed to detecting and tracking an airplane, as opposed to conducting a seismic survey. Accordingly, like Owen, *et al.*, Michel fails to disclose an apparatus or method for use in "seismic data acquisition in a land or transition zone environment" or a "positioning device" for the same reasons. However, in addition, Michel's airplane is actually flying, as opposed to taxiing on the runway. This means that even if the airplane is considered to be a "positioning device," it is not capable of being and cannot be placed near the seismic sensor. Thus, Michel fails to anticipate any of the claims.

C. Hamilton Fails to Anticipate Any Claim

The present Office Action rejected claims 52 and 72 as anticipated under 35 U.S.C. § 102 (b) by U.S. Letters Patent 3,547,218 ("Hamilton"). However, Hamilton fails to anticipate any of the claims because it fails to disclose two limitations—namely, a "positioning device" and an "airborne acoustic transmission." The present Office Action alleges that the helicopter 11 is a "positioning device," stating that the helicopter is a positioning device because, "...it possesses the rotor blades that serve as the *seismic impulse source*...." Thus, the Office's own

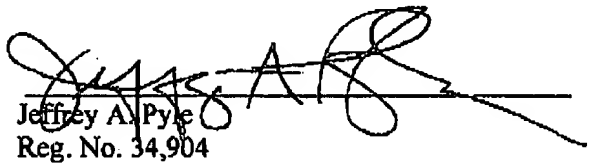
characterization establishes that the helicopter functions as a seismic source, not a positioning device. Furthermore, the acoustic waves employed by Hamilton are subterranean, not airborne, as evidence by the fact that the sensors 16, 17 are geophones, not microphones.

III. CONCLUDING REMARKS

Thus, none of the references anticipate any of the claims pending in the case. More particularly, none of the references discloses a "positioning device." Other limitations are also not disclosed depending on the claims and reference involved. While the Office does attempt to read the references on the claims, the construction efforts are performed in the hindsight of Applicants' disclosure. To arrive at these constructions, the Office was forced to construe the references and Applicants' claims in a manner contrary to that employed by those in the art, and, thus, contrary to law.

Applicants therefore respectfully submit that the claims are in condition for allowance and accordingly requests that they be allowed to issue. The Examiner is invited to contact the undersigned attorney at (713) 934-4053 with any questions, comments or suggestions relating to the referenced patent application.

Respectfully submitted,



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